



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/599,520

05/11/2007

Robert Poirrier

150026.00000

1235

67678

7590

02/05/2010

BRYAN CAVE POWELL GOLDSTEIN
1201 WEST PEACHTREE STREET, NW
ONE ATLANTIC CENTER, FOURTEENTH FLOOR
ATLANTA, GA 30309-3488

EXAMINER

LIPITZ, JEFFREY BRIAN

ART UNIT

PAPER NUMBER

3769

MAIL DATE

DELIVERY MODE

02/05/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,520	Applicant(s) POIRRIER ET AL.	
	Examiner JEFFREY B. LIPITZ	Art Unit 3769	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-10 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-10 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/29/2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments/amendments filed January 4th 2010 with respect to the claim objections and 112 rejections have been fully considered and are persuasive. The claim objections and 112 rejections have been withdrawn.

Applicant's arguments with respect to the prior art rejections have been fully considered but they are not persuasive.

Applicant asserts that Gerdt does not teach an apparatus capable of diffracting light or a method in which diffraction explicitly or implicitly occurs. Applicant also cites the American Heritage Dictionary to define diffraction as a "change in the directions and intensities of a group of waves after passing by an obstacle or through an aperture whose size is approximately the same as the wavelength of the waves." Applicant is correct that Gerdt does not disclose apertures of this size. However, diffraction is not consistently defined by the definition used in the American Heritage Dictionary. Diffraction can take place at all optical boundaries, such as when light passes through a lens or at the boundary of an aperture. Diffraction is more broadly defined as "the bending and spreading of a wave around the edge of an object (The American Heritage Science Dictionary 2002)". Random House Dictionary (2010) defines diffraction as "the phenomenon exhibited by wave fronts that, passing the edge of an opaque body, are modulated, thereby causing a redistribution of energy within the front: it is detectable in light waves by the presence of a pattern of closely spaced dark and light bands at the edge of a shadow" and "the bending of waves around obstacles in their path".

Art Unit: 3769

Examiner admits that the apertures or lens of Gerdt may not produce a detectable diffraction pattern; however, they will result in at least some of the light rays being diffracted. Applicant does not claim a particular diffracting device or provide a functional recitation or step with the kind of specificity that be needed to define diffraction in the manner suggested by Applicant. Furthermore, Applicant does not provide a special definition of diffraction in the originally filed disclosure. Therefore, Examiner has taken the broadest reasonable interpretation of diffractive element - an element that causes bending and spreading of a wave around its edge. In the instant case, the diffractive element can be the aperture, as discussed in this previous office action, or a lens within the aperture (Summary of the Invention). Thus, the prior art rejections have been maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-7, 9-10, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerdt (US 6235046).

Regarding claims 1, 2, 6 and 7, Gerdt teaches a device for implementing a phototherapy method on a set of eyes (Column 2, Lines 30-36) comprising: glasses or spectacles (170) with a plastic frame (180) and lenses (178), and at least one light

Art Unit: 3769

source (172 or 176 or 202) mounted on or embedded in the lenses or frame (Column 8, Lines 61-67; Column 9, Lines 1-9; Figure 16). Gerdt teaches that specific wavelengths are applied to the retina, but minimal light is applied to the fovea (Column 5, Lines 56-59). Gerdt teaches that the light sources are positioned in a circular configuration around the center of the eye or at the periphery of a field of vision of the individual (Figures 4, 6 and 13). The light is delivered to each eye by an off-center diffractive optical element or ring (70 or 180; Column 5, Lines 41-55; Column 7, Lines 59-66). Examiner interprets the ring as a diffractive element because it delivers light to each of the eyes through apertures (42 or 184; Figures 6 and 14). In the embodiment of Figure 14, the light is delivered to ring (180) and then exits the ring through apertures (184). The light must split to exit the ring. Since all of the apertures are located on one side of the ring, they will recombine between the ring and the eyes.

Regarding claims 3 and 15, Gerdt teaches angling the light into the eye so that it terminates on the retina and avoids direct contact with the fovea (Column 5, Lines 45-53). Gerdt also teaches using multiple apertures to direct light into the eye (Figures 4, 6 and 13). An image or rays of light are normally projected onto the retina by converging at a point behind the pupil (Figure 1). The greater the angle of entry of the light rays into the eye, relative to the direct line of vision (perpendicular to the center of the pupil), the closer the convergence of the light rays, relative to the pupil. In order for the light to form an image on the retina the light rays must converge before the retina, as illustrated in Figure 1.

Art Unit: 3769

Regarding claim 9, Gerdt teaches that the light sources can be LED's (Column 6, Lines 28-67) and that each eye has its own deflection means (lenses and light ring) arranged to cooperate with the light sources of each eye (Column 9, Lines 1-8; Figure 16). Each of the lenses (178) is any of the embodiments of light rings discussed with respect to Figures 4, 6, 13, or 14.

Regarding claims 10 and 13, Gerdt teaches using different numerical apertures for the core and cladding. These properties of the core and cladding alter the angle of exit of the light beam into the light ring. The fibers are embedded in the frame of the glasses with the light source (Column 8, Lines 66-67; Column 9, Lines 1-8). Examiner interprets the frame of the glasses to be at the periphery of the field of vision. Claim 13 recites limitations that are necessitated by the limitations set forth in claim 6 ("emitting light rays are directed into the eyes by deflection means") and claim 10 ("a condenser is arranged so as to direct light rays emitted by each of the light sources onto deflection means").

Regarding claims 16 and 17, Gerdt teaches that some of the lit ends (176; Figure 16) or the places when the light leaves the apertures are positioned above the fovea since they are positioned on the top of the frame (180). This means that the "specific zone" is inherently below the fovea, when the light is emitted from above the fovea. Thus, at the very least, Gerdt's device is capable of providing a specific zone below the fovea, and it would inherently do so in instances in which those sources are primarily used. Furthermore, the method claim could be rejected under 103 as it would be obvious to provide light sources above the fovea or focus the light below the fovea in

Art Unit: 3769

instances in which the patient is preferentially viewing objects in front of and above their line of sight. Gerdt teaches providing his device so that a patient can undergo the therapy at the same time as performing other activities (Background of the Invention).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerdt.

Regarding claim 14, Gerdt does NOT teach the F number of the diffractive lenses. However, Applicant provides no rationale for using an F number of around 0.7. Therefore, the approximate F number of the diffractive lens does not appear to be critical to the practice of the invention. In addition, the optimal F number will depend on the position of the target spot to be illuminated relative to the light source. Applicant discloses that the light rays should be directed to a point slightly behind the pupil of the eye (Pages 4 and 10). Gerdt teaches angling the light onto the retina, which is behind the pupil of the eye. Therefore, Gerdt must have chosen an F number of the diffractive lens that would enable light to be directed in a similar manner.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerdt as applied to claim 6 above, and further in view of Goldman (US 5923398).

Art Unit: 3769

Regarding claim 8, Gerdt does NOT teach using a spectacle attachment to provide the light sources or the deflection means as claimed. However, attention is directed to Goldman who also teaches a eyewear for providing retinal stimulation (Column 2, Lines 1-14). Goldman teaches using clip-on elements or spectacle attachments to be attached to the wearer's glasses (Column 2, Lines 34-39; Column 4, Lines 31-36). The remaining limitations of this claim are substantially similar to those of claim 7, rejected supra. It would have been obvious to use spectacle attachments with eyeglasses, because some patients that require the phototherapy treatment offered by Gerdt may need to use corrective lens to read or watch television. It is an object of Gerdt to provide the user with a device that will allow a user to read or watch television while undergoing treatment (Column 5, Lines 50-55).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3769

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY B. LIPITZ whose telephone number is (571)270-5612. The examiner can normally be reached on Monday to Thursday, 10 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry M. Johnson III can be reached on (571)272-4768. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFREY B LIPITZ/
Examiner, Art Unit 3769

/Henry M. Johnson, III/
Supervisory Patent Examiner, Art
Unit 3769